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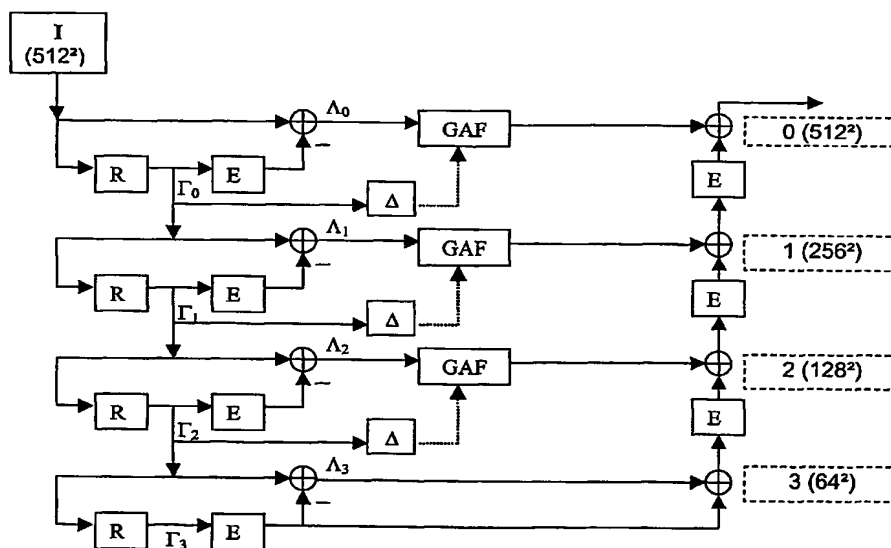
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(54) Title: METHOD OF PROCESSING AN INPUT IMAGE BY MEANS OF MULTI-RESOLUTION



(57) **Abstract:** The invention relates to a method of multi-resolution with gradient-adaptive filtering (MRGAF) of X-ray images in real time. For an image strip of 2K adjacent rows, a resolution into a Laplacian pyramid ( $L_0, \dots, L_3$ ) and a Gaussian pyramid ( $G_0, \dots, G_3$ ) is carried out up to the K-th stage. By limiting a processing operation to such a strip, it is possible to keep all relevant data ready in a local memory with rapid access (cache). A further acceleration compared to the conventional algorithm is achieved by calculating the gradient ( $D$ ) from the Gaussian pyramid representations. By virtue of these and other optimization measures, it is possible to increase a multi-resolution with gradient-adaptive filtering to a processing rate of more than thirty (768 @ 564) images per second.

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